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FORM PTO 449 U.S. DEPARTMENT OF COMMERCE PATER AND TRADEMARK OFFICE	ATTY. DOCKET NO. EPI-00671b	SERIAL NO. 09/543,679	
INFORMATION DISCLOSURE STATEMENT	Jonathan W. Nyce		
BY APPLICANT	FILING DATE April 4, 2000	GROUP 1635	
. J (USE SEVERAL SHEETS IF NECESSARY)	April 4, 2000	1000	

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EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	Rahman, M. Sayeedur, et al., "Nebularine (9-2'-deoxy-beta-D-ribofuranosylpurine) has the template characteristics of adenosine in vivo and in vitro", Mutation Research, vol. 377, no. 2, 1997, pages 263-268
Chan I	Loakes, D. et al., "5-Nitroindole as an universal base analogue", Nucleic Acids Research, vol. 22, no. 20, 1994, pages 4039-4043
12	Ohtsuka, E. et al., "An alternative approach to deoxyoligonucleotides as hybridization probes by insertion of deoxyinosine at ambiguous codon positions", Journal of Biological Chemistry, vol. 260, no. 5, 10 March 1985 (1985-03-10), pages 2605-2608
	Nichols, R. et al., "A universal nucleoside for use at ambiguous sites in DNA primers", NATURE, vol. 369, no. 6480, 9 June 1994 (1994-06-09), pages 492-493
	Metzger W. James et al., "Oligonucleotide therapy of allergic asthma", Journal of Allergy and Clinical Immunology, vol. 104, no. 2 part 1, August 1999 (1999-08), pages 260-266

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INFORMATION I	DISCLOSURE
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Application Number	Not yet assigned					
Filing Date	herewith					
First Named Inventor	Jonathan W. Nyce	_				
Group Art Unit	not yet assigned					
Examiner Name	not yet assigned					
Attorney Docket Number	EPI-067191	_				

	U.S. PATENT DOCUMENTS										
Examiner Joitlais	Cite No.1	U.S. Patent Number	Document Kind Code -{If known}-	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear					
1/1	1	5,245,022	10 10 10 10 10 10 10 10 10 10 10 10 10 1	Weis, et al.	09/14/93	class 536					
1/1	2	5,320,962		Stiles, et al.	06/14/94	class 435					
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code (MPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Skind of document by the appropriate symbols as indicated on the document under WPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449B/PTO	Application Number	Not vet assigned .
INFORMATION DISCLOSURE	Filing Date	herewith
INFORMATION APPLICANT	First Named Inventor	Jonathan W. Nvce
STATEMENT BY APPLICANT	Group Art Unit	not vet assigned
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Sheet 7 of 1 4		

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caminer	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), include name of the author (in CAPITAL LETTERS), title (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-Issue number(s), highligher city and/or country where published.	T2							
	Stull, R.A. et al., "Predicting antisense oligonucleotide inhibitory efficacy: a computation, approach using histograms and thermodynamic indices", Nucleic Acids Research, 3501-3508 (1992).									
19	Moi Olig	nia, B.P. et al., "Selective Inhibition of Mutant Ha-ras mRNA Expression by Antisense gonucleotides", J. Biol. Chem., Vol. 2G7 No. 28, Issue of October 5, 19954-19962 92).								
	Pas	sternak, Gavril W., "Molecular Neuropharmacology", The Scientist, 10(8):14 (1996).								
		search Program - Antisense Technology, Novopharm Biotech - Research Program - tisense Web Page, http://www.novopharmbiotech.ca/asense.htm.								
	Ak	htar, S. et al., "In vivo studies with antisense oligonucleotides", Trends in armacological Sciences, Current Techniques, 18:12-18, (1997).								
	Ny	rce, J.W., "Antisense oligonucleotides as emerging drugs", Emerging Drugs, 3:365-378								
	l an	vce, J.W., "Respirable antisense oligonucleotides as novel therapeutic agents for asthrodor, "Respirable antisense oligonucleotides as novel therapeutic agents for asthrodor, and other pulmonary diseases", Exp. Opin. Invest. Drugs 6(9): 1149-1156 (1997).								
	Nv	rce, J.W. et al., "DNA Antisense Therapy for Asthma in an Animal Model", <u>Natu</u> 15(20): 721-725, (1997).	re,							
	W	ebb, A. et al., "BCL-2 Antisense Therapy in Patients with Non-Hodgkin Lymphor incet, 349(9059): 1137-41, (1997).	na",							
	Y	azaki, T. et al., "Treatment of Glioblastoma U-87.by Systemic Administration of chisense Protein Kinase C-Alpha Phosphorothioate Oligodeoxynucleotide", Molectarmacol., 50(2): 236-242, (1996).	ular ular							
	Fa	armer, S.G. et al., "Adenosine Receptor-mediated Contraction and Relaxation of uinea-pig Isolated Tracheal Smooth Muscle: Effects of Adenosine Antagonists", Pharmacol., 95: 371-378 (1988).	Br.							
	-	<u>, Pnarmacol., 95: 371-376 (1966).</u> Narquardt, D.L. et al., "Aminophylline Exposure Alters Mouse Bone Marrow-deriv Nast Cell Adenosine Responsiveness", <u>J. Allergy Clin Immunol.</u> 78: 462-469, (19	ed (86)							

Date Examiner Considered

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DISCLOSURE Y APPLICANT

Application Number Not vet assigned
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First Named Inventor Jonathan W. Nvce
Group Art Unit not vet assigned
Examiner Name not vet assigned

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Attorney Docket Number

EPI-067191

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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

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beta and C beta II block 1,25 -(OH)- 2D3- induced differentiation", J. Biol. Chem. 273(31):19587-19591 (1998).

Chen, CC et al, "Protein kinase Ceta mediates LPS-induced nitric oxide synthesis expression", J. Biol. Chem. 273(31): 19424-19430 (1998).

Glukhov, A. I., et al., "Inhibition of telomerase activity of melanoma cells in vitro by antisense oligodeoxynucleotides", Biochem. Biophys. Res. Commun. 248(2):.368-371 (1998).

Banasiak, K. J. and Haddard G. G., "Hypoxia-induced apoptosis: effect of hypoxia severity and role of p53 in neuronal cell death (Antisense to p53)", Brain Res. 797(2): 295-304 (1998).

Lehenkaru P et al, "Carbonic anhydrase II plays a major role in osteoclast differentiation (antisense to carbonic anhydrase II)", Exp Cell Res 242(1):128-137 (1998).

Dooley NP et al, "Apoptosis is induced in glioma cells by antisense oligonucleotide to protein kinase C alpha", Neuroreport 9(8):1727-1733 (1998).

Kondo S et al, Antisense telomerase treatment: induction of distinct pathways, apoptosis and differentiation", FASEB J. 129100:801-811 (1998).

Alahari SK et al, "Novel chemically modified oligonucleotide provide potent inhibition of p-glycoprotein (an ATPase that serves as a drug efflux pump)", J. Pharmacol. Exp. Therapeut. 286(1): 419-428 (1998).

Wu Pong, S. "Oligonucleotides: Opportunities for Drug Therapy and Research," Pharmaceutical Technology, Vol. 18: 102-114.

Miller et al. "Gene Transfer and Antisense Nucleic Acid Techniques," Parasitology Today, Vol. 10, No. 3: 92-97.

Stull et al. "Antigene, Ribozyme and Aptamer Nucleic Acid Drugs: Progress and Prospects," Pharmaceutical Research, Vol. 12, No. 4: 46j5-483.

Examiner Signature

Date Considered 2-9-01

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	j. 19:	MIL 37 (1	LIGAN et al.; Current Concepts in Antisense Drug Design. J. Med. Chem. 36(14): 1923-993).	
(-	S. the	ALI ophy	et al.; Adenosine-induced bronchoconstriction in an allergic rabbit model:antagonism by lline aerosol. Agents Actions 37:165-167 (1992).	-
	S. ALI et al.; Modification of allergen-induced airway obstruction and bronchial hyperresponsiveness in the allergic rabbit by theophylline aerosol. Agents Actions 37:168-170 (1992).			
١.	troi	n Al	et al.; Adenosine-Induced Bronchoconstriction and Contraction of Airway Smooth Muscle lergic Rabbits with Late-Phase Airway Obstruction: Evidence for an Inducible Adenosine or. J. Pharmacol. Exp. Therapeu. 268:1328-1334 (1994).	A,
	S. ALI et al.; Adenosine receptor-mediated bronchoconstriction and bronchial hyperresponsin allergic rabbit model. <u>Am. J. Physiol.</u> 266:L271-277 (1994).			
	D.F <u>NT</u>	R. SI <u>IS F</u>	BLEY, et al; Transfected Mammalian Cell Lines Expressing the Al Adenosine Receptor ield/Group Codes: 57F, 57B, 57Q 90D (5 June 1991).	
	tı	reati	nis J. U., et al, "Human melanoma metastases is inhibited following ex vivo ment with an antisense oligonucleotide to protein kinase C alpha", Cancer Lett. 1): 65-70 (1998).	
	H 7	[aec 7(1)	kel C., et al, "Antisense oligonucleotide inhibit urokinase", Int. J. Cancer 153-160 (1998).	
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